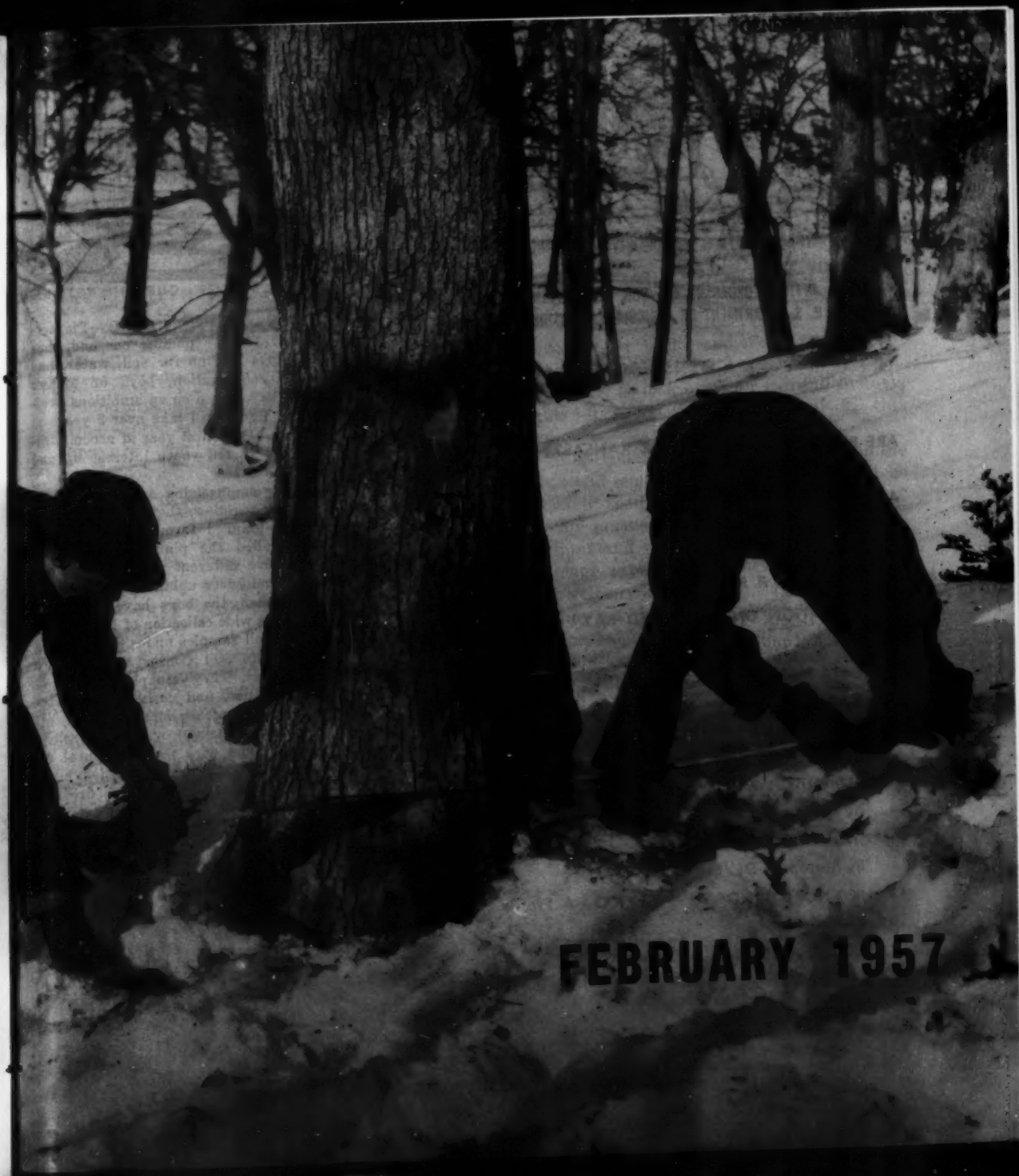

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SOIL CONSERVATION

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U. S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

★ THIS MONTH ★

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OUR SOIL ★ OUR STRENGTH

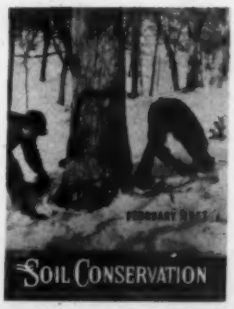
4-H CONSERVATION CLUB.—Pioneering New Jersey's number one and, thus far, only 4-H Club for soil, water, and wildlife conservation, boys of Mercer County have taken on an ambitious project they figure will take over 5 years to complete. Their first year of accomplishment has stirred youth interest up and down the State.

They're emphasizing action. On their initial get-together, they went to a conservation-planned farm near Princeton. They studied the plan and thereupon planted five different species of shrubs to feed and cover upland game.

Since then, the boys have made and identified a wide collection of New Jersey rock and soil samples under the direction of the State Soil Conservation Service soil scientist. They've explored soil erosion, land use, and conservation practices on half a dozen local farms.

Expanding their program to include enjoyment and wise use of natural resources, the club recently added hunting, rifle marksmanship, and firearms safety to their list of events. Their charter meeting drew 8 members; at the latest meeting, 20 boys and 4 parents joined the fun.

—HARRY R. SLAYBACK



FRONT COVER.—A white oak wolf tree is being cut on a Minnesota farm to allow more room for seedlings and younger growing trees.

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Are Black Days Ahead For Kansas?

The state conservationist discusses the probability of severe wind erosion in the western part of Kansas during the winter and spring of 1957.

By FRED J. SYKES

ALMOST every day I am asked how much wind erosion we are going to have in Kansas this winter and next spring.

There are some "ifs" involved; but no matter how you look at it, the picture is not bright.

The situation can be summed up this way: We can expect severe blowing—if, as normally expected, hard winds come.

It is apt to be worse than it ever was in the thirties. Larger acreages are without cover and far more of the extremely hazardous lands are exposed.

But this ray of encouragement brightens the other side: The farmers of Kansas have done a remarkable job of fighting the threat with emergency tillage.

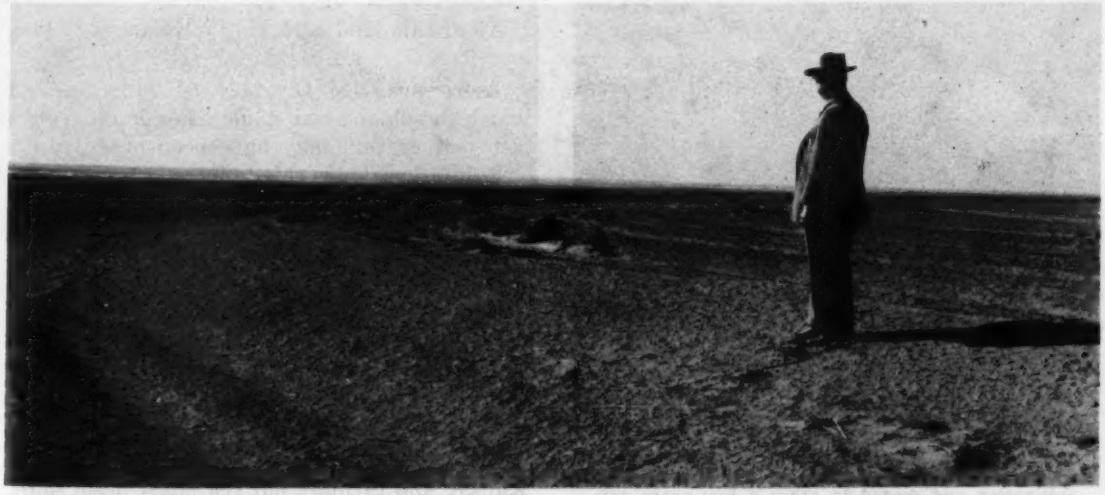
Before I go any farther I'd like to emphasize something that many people seem to forget. The 5 years of drought, one of the factors contributing to the situation, are not abnormal. You have only to look over our rainfall history. Droughts such as this are natural to this country.

The chief trouble is we can't predict when the droughts will come. If we could, we would be more nearly ready for them.

We can normally expect sometime during each winter and spring the kind of winds that will damage exposed soil. These winds may be the high velocity kind that do their harm quickly. Or they may be more moderate in force, but cover a period of days. Either kind tears the exposed soil loose and makes life miserable. We were pretty lucky in the matter of winds last year.

Kansas is the largest winter wheat producing State in the Nation. From 1942 to 1952 it seeded an average of 14,202,000 acres of wheat, harvesting an average of 12,707,000 acres. The

Note.—The author is state conservationist, Soil Conservation Service, Salina, Kans.



Soil blowing started on this western Kansas, terraced wheatfield in the fall of 1956.

A typical western Kansas sorghum crop on dry land in 1956. No grain matured.

State's average annual harvest of wheat over the 10 years ending with 1952 was nearly 204 million bushels.

Kansas also grows large acreages of grain sorghum—for grain, forage, and silage. Over the 10 years before 1953 its grain sorghum acreage averaged 1,475,000, its yields averaging 28½ million bushels.

As the drought clamped down, the 1953 area in grain sorghums was about a half million acres above the average. In 1954 it rose to more than 3 million acres.

Both wheat and grain sorghums can provide good stubble in years when there is enough moisture. Crop residues, when properly used, afford great protection to the soil. The residues shield the soil from wind and return to the soil organic matter so important to its structure and productivity.

Farmer Kenneth W. Davis (left) and Fred J. Sykes examine a thin stand of grass on a field retired from cultivation and seeded to grass a few years ago.

The Kansas land in condition to blow—that is, without cover to protect it against high winds—was more than 10 million acres in December 1956. This was scattered over the western two-thirds of the State.

This land falls mainly into three categories: (1) Land that was summer fallowed—rested to store up moisture for the following crop; (2) land on which the crop for 1956 failed, or (3) land that produced a crop but that was harvested or grazed in a manner to leave the soil exposed.

All of this land is lacking in residues to protect it.

There are also acreages of rangeland on which the plant cover made little or no growth last year or that may have been overused.

Rainfall varies in this country from less than 50 percent of the longtime average to more than 150 percent. There are usually several years when the rainfall is below this average and then a succession of years when it is above.

The average rainfall of around 16 inches is just about enough to grow the crops that are adapted. Any less means a short crop or failure. More moisture means better than average yields.

In the development of agriculture in western Kansas, the farmers put the lands most suited

for crops into cultivation. The more critical lands were not plowed until later.

There were two periods of rapid expansion of our cultivated land. One was between 1920 and 1930 just after World War I. The second was from 1945 to 1952 after World War II. In both periods there was above normal moisture.

The drop in the price of wheat in 1930 was the first sign of disaster in that period. In 1931 there was a bumper crop and the bottom fell out of the price structure. Wheat sold at 25 cents a bushel at the elevator. It was a crushing blow to wheat farmers. Then a long drought set in; farmers pulled out by the thousands.

Since the 1930's around 2 million new acres have been brought into cultivation. This includes much of the poorer soils in the 16-inch rainfall belt. Large acreages have been broken out in areas that in normal years should not be expected to grow harvestable wheat. In above normal rainfall years, however, it produces wheat at a profit.

Then, scattered throughout the State are more than 2½ million acres of land that, even under favorable moisture conditions, cannot produce enough to repay costs.

A few dying wheat plants give little protection to this Kansas field.

Blown soil and tumbleweeds have almost covered this tractor and plow during the last 2 years.

Kansas farmers generally have put forth great efforts in trying to protect their exposed soils with emergency tillage. This represents the cooperative effort of all the agencies working on the problem. This measure, however, cannot be expected to perform miracles. On some lands, tillage can do little or no good. These are lands without cover that have been worked so often that the soil is loose and finely pulverized.

Another factor on the minus side is that many of our present farmers are short in experience. Not many of the farmers who went through the thirties, and learned hard lessons, are farming now. In their place is a new generation, unaware of the hazards besetting their land.

On the credit side is the matter of good equipment. The lack of equipment was one of the distressing problems 20 years ago. We now have equipment of the kind needed to carry on emergency tillage as long as it is effective.

Also on the credit side is the help in technical know-how and funds given by the Federal Government. In this respect, the Soil Bank, represents a big opportunity. I think we should consider putting into the Soil Bank these millions of acres of poor lands that are not profitable to farm. We should put them into the conservation reserve with help from Federal funds to restore them to perennial grasses. And a part of our better lands should go into the acreage reserve for soil improvement and protection.

(Continued on page 166)

A Brief Tour of Russia

A soil conservation district supervisor discusses some of his observations while on a tour with other Oklahoma farmers and farm leaders in Russia.

By CHARLES HOLLOPETER

THE tour of Oklahoma farmers to Russia during May 1956, was an exceptional experience to most of us. This group of 29 men, engaged in various forms of agriculture, were out to explore the major centers of interest in the Soviet Union. But farming was, by no means, the sole attraction for these farmer tourists.

In Leningrad, as well as in Moscow, we found ourselves completely engrossed in the art and culture of Russia as we passed through numerous museums and art centers. In fact, Russian art and culture were literally running out of our ears before we visited any of the agricultural areas in which we were primarily interested.

While in Moscow, we visited our first tractor station, located some 20 miles northwest of the city. Here, 82 tractors are maintained. They range in size from 15 horsepower, steel wheel units to larger and newer 52 horsepower crawler type tractors. These tractors, as well as other heavy machinery, are used on nearby collective farms and State farms under an agreement whereby the tractor station receives a portion of the crops.

State farms are strategically located throughout the Soviet Union, much the same as our experiment stations; but the Soviet farms serve as demonstrational units to carry out the new and better methods as they are developed. The workers on the State farms are paid a monthly salary, with an additional bonus if production exceeds their norm.

We visited a State farm located some 50 miles west of Moscow where the major interests were poultry production and dairying. Their feeding methods and rations were quite interesting, but were geared for a much colder climate than ours. Dry lot feeding was practiced, as the cows were maintained in a barn during their entire lactation period. Their average annual milk production per cow is increasing, and now stands at about 1,690 gallons per cow. Women milk the cows by hand 4 times a day, working in two 8 hour shifts. Twenty-two cows are milked by each woman, as her production norm.

The collective farms, of which there are 89,000 in Russia, are the principal source for surplus agricultural production. Here both men and women are actively engaged in the production, harvesting, and processing of their products. These farmers share in the farm's productiveness on the basis of their man-hours of labor. After deducting the tractor costs, taxes, seed, feed, and costs of other services, the proceeds are divided among the workers according to their labor. The Ministry of Agriculture announces at the start of each crop season which crops are to be grown and the price to be paid. Severe weather, as experienced in Russia the past winter when the temperature reached as low as 60° below zero, destroyed much of the wheat crop.

One of our most interesting experiences was the visit to the Agricultural Academy in Moscow. In this college, which was established in 1865, they have been in continuous operation for 90 years studying all types of agriculture. Their study of soils and agronomy is outstanding. This college offers a 5-year course, and the students are evenly divided between young men and women. This ratio also extended to the faculty, the women teaching gardening, fruit growing, entomology, zoology, and many other subjects. Their studies, in most respects, were similar to those in our agricultural colleges, except that they also include fish culture and studies of marine life grown in large, man-made lakes located on the college farm. It was during the briefing of our group by the president of the academy, G. M. Losa, and his faculty

Note.—The author is chairman of the board of supervisors of the Western Kay County Soil Conservation District in Oklahoma. Formerly, he was a soil scientist with the Soil Conservation Service.

that I, through our interpreter, expressed our appreciation and thanks to the early Russian scientists who perfected and used soil classification methods that were copied by our own Department of Agriculture shortly after the turn of the century. To this Dr. Losa replied, "Yes, we know your able Dr. C. F. Marbut, for he spent a year here in this university and studied under our Professor Glinka many years ago." He added that Professor Glinka's grandson is now a member of their faculty, though he is teaching animal husbandry instead of soils. Here was a third generation still teaching in the same university.

At the academy we were taken on a tour of an elaborate display of some 2,000 mounted soil profiles, representing each of the major soils of the Soviet Union, ranging from the frozen tundra of the Arctic region to the laterite soils of the subtropics. With each of these soils were pictures of the typical landscape, as well as samples of the original vegetative cover. They also were proud of their soil profile exchange with other countries, showing us soils of Eastern Asia. They expressed an eagerness to exchange soil profiles with the United States.

As the subject turned to grasses, we found little understanding beyond their cultivated crops until one of our group, A. P. (Red) Atkins, of Guymon, Okla., brought in the Latin names of our native grasses; and from then on those of us who knew the Latin names were able to act as interpreters for the others.

The graduates of this agricultural academy are sent to some of the 800 junior colleges and other agricultural colleges and to the State farms within the Soviet Union as teachers. They told us that about 70 percent of the academy graduates became teachers or entered some technical field, while the other 30 percent worked in some practical field of agriculture.

Animal husbandry, especially the development of higher producing milk cows, is an important part of their projected plans. Horses, beyond doubt, have played an important role in the history of Russia, and are, by no means, to be overlooked as an important subject of popular discussion. It was interesting to all of us to learn that they devote one entire college classroom building to the study of horses and the physical makeup most desirable for draft animals, as well as for wartime adaptabilities.

Oklahoma farmers on tour in Kiev, Russia, with Russians, in foreground, acting as guides.

On a number of our farm visits we heard the report that Russian agronomists had developed a perennial wheat, which, if true, could revolutionize the production of that commodity. At the agricultural academy we learned that this was still in the plans, but so far was classed as wishful thinking.

On a typical Russian collective farm we found an exceptionally friendly greeting. Before we left we felt a closer kinship to these people by our common understanding of their problems and interests. We learned that 41 percent of the people in Russia are farmers. What they lose in technical skill and, I might add, efficiency, they make up in long hours of hard work. There is an air of independence about the thatched roof farm home, even though it is crowded, as compared to the giant apartment houses of the industrial centers. For each farmer owns the 1 hectare of land, approximately 2½ acres, on which his house is located. Here he can raise his own garden, or keep his own cow or pig.

Soil conservation on the vast acres of collective farms is relatively unheard of; yet evidence indicates that some severe erosion has taken place. The usually gentle rainfall and generally moderate to gentle slopes are not conducive to rapidly accelerating erosion. Also, there is the fact that much of their annual moisture comes in the form of snow, and this moisture soaks in gradually. Yet, to a former soil surveyor, the erosion seems severe enough to warrant more attention than is being given.

The establishment of a soil conservation plan there would, no doubt, be quite different than our accustomed methods.

Perhaps the best example of Russian methods came to light during one of our many comparisons with our able interpreter. We were discussing the work of our county extension agents and explaining that this type of information to our farmers was free for the asking and that the farmers were free to accept or reject this help as they so desired. To this our interpreter asked, "Why, then, if your Government thinks it is good for the farmer, is he not required to accept and follow this information?"

Even though the Communist government, through its vast and effective education system, appears to be making an all-out effort to develop engineers and scientists in many fields, it is apparent that their technical agricultural fields have not kept pace. This will eventually lead to greater problems in the future.

The soils of Russia are, for the most part, developed under both prairie and mixed forest cover over a conglomerate water-laid material similar to our coastal plains soils. The vast, undulating topography of the Ukraine is broken by slow, and in many areas, poorly drained, swampy areas. Along the Dnieper River is a wide belt of light, sandy soils similar to the loess soils along our Mississippi River. It was interesting to learn that soil fertility had been maintained to a remarkably high degree in the Ukraine by the liberal application of barnyard manure and compost at an average of 5 tons per acre annually. On this, they reported a wheat yield last year of approximately 25 bushels per acre. The use of complete fertilizers are proving quite profitable on a 25-50-25 formula, particularly in the production of sugar beets.

The desire for world peace was so frequently expressed by the farmers we met that none of us could escape the feeling that their expressions for world peace were sincere.

Russian school children march past a display of the heroes they are taught about.

MAGAZINE SUBSCRIPTIONS TO SCHOOLS.—The board of supervisors of the Hamblen County (Tenn.) Soil Conservation District has given a 1-year subscription to SOIL CONSERVATION Magazine to each county school library and to each department of vocational agriculture in the county for the current year. The supervisors also gave each school a packet of soil and water conservation material for teachers.

The First Three Years

A young dairy farmer wins an award for conservation farming within 3 years from the time he decided soil and water conservation were essential for success.

By EDWARD R. KEIL

CLEMENS MITCHELL is a young New York farmer who believes that farming has a future. He's preparing for it.

Three years ago young Mitchell didn't think his farm had much of a future. The topsoil was getting mighty thin. For years erosion had been gnawing away at his long, unprotected slopes. Row crop and pasture yields were skidding down, down, down . . . . He watched with growing anxiety as his cows gave less and less milk.

Note.—The author is deputy state conservationist, Soil Conservation Service, Syracuse, N. Y.

Mitchell decided that there was only one way to stop this downward plunge—that was through a soil and water conservation program. He signed an agreement with his Rensselaer County Soil Conservation District. He agreed to plan and apply, with district and Soil Conservation Service help, all the dovetailing conservation measures his land needed. That way, he figured, he'd stop erosion and improve his land.

Recently Oliver A. Hyatt, the district's board chairman, gave Mitchell a bronze plaque. The young farmer had captured the district's award

A view of the Clemens Mitchell farm in the background with Mitchell (left) and SCS technician Henry Ruckaberle in the foreground.

Clemens Mitchell clearing brush and trees.

for applying more conservation measures within the year than any other cooperator.

Mitchell has a lot to do before he gets all his planned conservation measures on the land. But already his conservation work is jingling the cash register. For example, yearly milk production is up 1,000 pounds per cow.

"We're milking eight more cows than we ever milked before," Mitchell said. "And we're not buying any feed except concentrates. In the past, as forage and grain crops failed we'd have to sell a cow or two. I figure that in time my conservation work will increase production all along the line by at least a third."

Mitchell farms 566 hill acres. That includes 200 adjoining acres he rents for pasture and meadow. He controls grazing carefully on the steeper slopes to conserve the grass.

On 137 acres Mitchell raises corn and oats in rotation with hay. He fertilizes and limes his cropland. He has improved part of his 57 acres of permanent pasture by applying 2 tons of lime per acre and seeding birdsfoot trefoil. He plans to improve all his pastureland in the same way. Fertilizing according to test is in his plans.

Conservation farming has stretched his grazing season. It now runs from mid-May to mid-October.

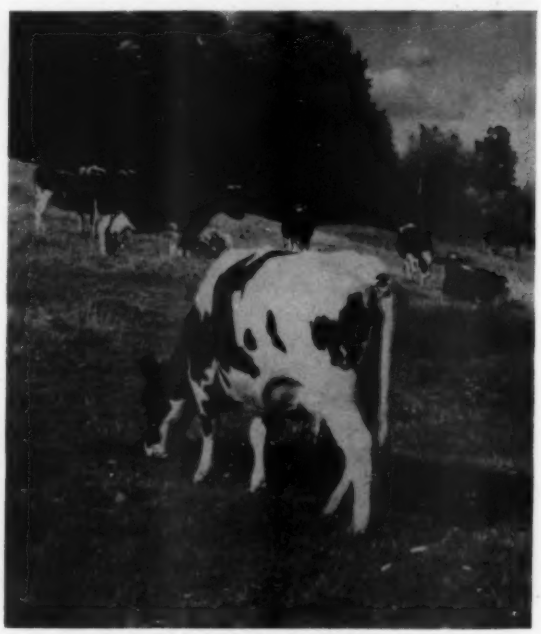
Mitchell has fenced most of his 102 acres of woodland and will soon complete the job. "I expect to cash in on my woods and don't want cattle grazing and trampling to cut down on my profits," he explained. He plans to rid his woodlands of culls and other worthless trees to give income-producing timber a better chance to develop. He'll replant thin spots.

"I now have 70 acres in native pasture where the slope is too steep for grazing," Mitchell said. "That's all going back into woods—pines.

Mitchell's rotation pattern is 1 year of corn, 1 of oats, and 4 years of hay. He uses alfalfa-timothy and alfalfa-bromegrass for hay.

Other major practices in Mitchell's overall conservation plan are diversion terraces and tile drains. The diversions block water coming down the slopes, carry it along slowly to a safe outlet. The tile drains off water that gets trapped below the soil surface.

Mitchell has 85 Holstein cattle. He usually milks about 40. His production is now up to about 350,000 pounds of 3.6 percent milk a year. He is improving herd quality through artificial insemination. Milk goes directly from his cows to a spotless all-metal tank. From there a plastic hose takes it to a tank truck. It's not touched by human hands.



Dairy cattle on the Clemens Mitchell farm.

Young Mitchell runs the whole farm with only occasional help from a hired hand. Modern machinery and labor-saving methods make this possible. He counts, though, on a helping hand from his mother and sister.

VO-AG BOYS STUDY RANGE CONSERVATION.—Colorado's large acreage of rangeland, under both public and private ownership, is one of the most important segments of the State's agriculture. Unfortunately, this valuable resource in past years has not been fully understood and appreciated by those who use it. Now, however, the wise use and improvement of these rangelands is receiving increased attention from all individuals and groups that have an interest in any phase of range use and management.

An outstanding example of this interest is the educational program recently promoted by soil conservation district leaders in the Republican Watershed Association of Soil Conservation Districts in northeastern Colorado. These leaders decided that the best way to promote range management for the future was to give more and better training to vocational agriculture students in the high schools.

Local residents, school board members, and vocational agriculture instructors throughout the area were contacted to stimulate interest in range conservation training for FFA members. The sanction and cooperation of the State Department of Vocational Education was sought and obtained.

A general meeting to make plans for getting the program under way, called in February 1956, resulted in cooperation of individuals and agencies that work in the field of range management; the State Department of Vocational Education, and vocational agriculture instructors.

Interest was keen among vocational agriculture instructors from a wide area who got the program off to an excellent start by participating in a range training workshop on July 30 and 31. Staff members from Colorado A & M College, Soil Conservation Service, and Extension Service were joined by local ranchers in arranging the workshop agenda. The purpose was to acquaint the agriculture teachers with range plant and site identification, criteria for determining range condition, applicable improvement practices, the economic benefits of sound range management, and sources of additional teaching material and aids.

A concentrated 2 to 4 week range training period in the vocational agriculture classes throughout the northeastern area of the State, during the first fall quarter, was climaxed with a range judging field day for all participating schools and individuals at the Kenny Conrad Ranch in Yuma County on October 13.

Students identified and classified range plants, determined range condition on different range sites, and recommended treatment or management practices to maintain or improve the range condition.

Again at the field day, agency and individual cooperation toward furthering the benefits of this program was apparent as SCS, college, and Extension Service personnel joined the agriculture teachers and local ranchers to select range sites, stake and number range plants, conduct the student groups, and tabulate final scores.

The Colorado Association of Soil Conservation Districts furnished suitable trophies for the school with the most participants, the high scoring team, and the high scoring individual.

With the firm basis on which this program has been established, and the impetus it is receiving from everyone who comes in contact with it, future growth and expansion to other areas of the State is expected.

CARL W. HERZMAN—
Extension Soil Conservationist

USING SOIL SURVEYS.—As soon as the new soil survey map of Northumberland and Montour Counties, Pa., was published, County Agent Leonard G. Yearick and I got together to plan full-scale use of it. We figured it was of practical value to a lot of people besides professional conservation and agricultural workers.

We first planned a study session for an invited list of people we thought could get something out of the soil survey. The session was held in the Northumberland Senior High School library. Ten interested persons plus a few agricultural professionals attended. We had distributed the soil survey map beforehand so that those attending would be familiar with it.

At this study session was a farmer, a banker, a farm loan organization representative, a feed dealer, a real estate man, 2 vocational agriculture teachers, and 3 agricultural representatives of a public utility company. David C. Taylor, soil scientists of the Soil Conservation Service, presided and led the discussions.

The group showed great interest in the maps and the soil descriptions found in the booklet. The realtor said the soil survey would help him guide his clients to the kind of land that could be used for what they had in mind. The banker and farm loan organization representatives said the survey would be valuable in helping them to decide how much could be safely lent to borrowers. The teachers felt that it would help them in teaching the value of soil and the need for conserving it.

Yearick and I had at first hoped for a large attendance. But we learned that a small attendance of not more than 10 or 12 was better. With the small group, we were better able to answer questions from everyone and to give greater attention to the particular needs of each one present.

This meeting confirmed our belief that widespread practical use can be made of our soil surveys. We are planning to hold further study sessions.

—D. JOSEPH SACCO

Conservation on "Terraced Bay"

A soil conservationist discusses some soil conservation problems and methods on Formosa.

By I. K. LANDON

STRIP the soil and water conservation problems of Taiwan to essentials and they may seem much like those of the United States. But consider the people, their traditions, type of farming, and the present pressure on the land and you have an entirely different situation.

Taiwan, meaning "Terraced Bay," better known to the Western World as Formosa, "Isle Beautiful," has gully erosion and sheet erosion; it has land being used beyond its capabilities; it has lakes and reservoirs that are silting up. It has denuded forest areas that cause disastrous flash floods with resulting caving stream banks and aprons of rocks and silt covering productive land.

Taiwan has watershed problems and is beginning to recognize them as such. There are no local organizations such as soil conservation districts to handle these problems, and none in the making at the present time. But Taiwan has watershed demonstrations and it is beginning to get "spread of practices." The Provincial Department of Agriculture and Forestry has a section of soil and water conservation.

It's the age-old story of having plenty of land in the beginning. But an increasing population put additional strain on the land. Farmers responded with increased production. But they didn't know the best methods of getting high yields while protecting land resources. Like most other countries Taiwan has little new land to develop. Its only frontiers are those of the farmers' mind and the adoption of better methods.

Taiwan is a subtropical island of about 8,882,000 acres. Nearly two-thirds of the area is classed as forest land. Two million acres must feed and clothe the people and provide export crops to help build up the limited and much needed foreign exchange. A million and a half mainland Chinese forced to Taiwan by the Communists in 1949 brought the population to about 10 million. Arable land per person averages 0.2 acres. And the population is increasing at more than 3 percent a year.

Other factors, in addition to population, that cause intensive farming of much of the land are: (1) Expansion of military installations, (2) destruction of previously cultivated fields by gullying and streambank caving, and (3) urban and industrial expansion.

Varied conservation measures have been urged in the past, many with considerable success. They include reforestation of sloping and denuded land in the hills and mountains; use of windbreaks on the western coastal plains to stop wind erosion and sand dune development; use of legume cover crops, especially in or-

Taiwan hillsides with newly constructed bench terra[illegible] a result

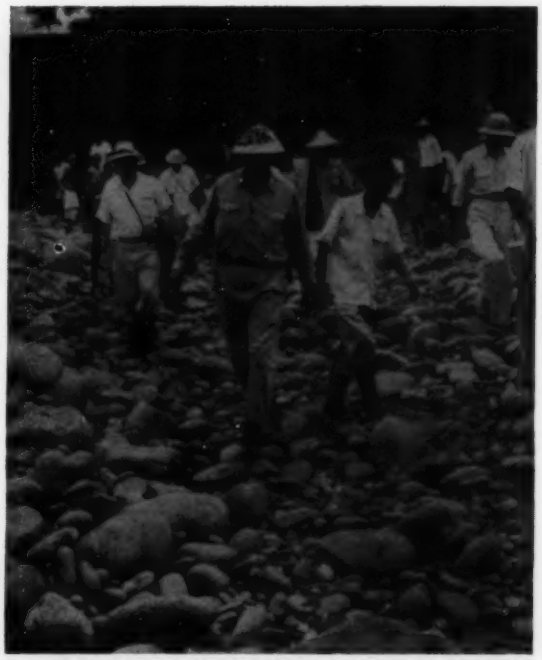
Note.—The author is soil conservationist for the Inernational Cooperation Administration, stationed on Formosa. Formerly he was an employee of the Soil Conservation Service.

chards and between dryland crops; contouring; and other soil and water conserving measures. Bench terracing, even on fairly level land, has been used for decades to create irrigated rice paddies.

The Joint Commission on Rural Reconstruction, a Chinese-American agency that carries out the agricultural phase of the International Cooperation Administration program in Taiwan, added a soil conservationist to its staff in 1954. The author took that job. He is 1 of 12 Americans and more than 100 Chinese technicians and administrators of JCRR helping Chinese Government agencies on a wide variety of rural programs.

Since research data was lacking, runoff plots were established. Last fiscal year information was collected on 75 field plots at 5 different locations. The work is handled by the Provincial Department of Agriculture and Forestry and the College of Agriculture at National Taiwan University with technical and financial assistance from JCRR. The observations obtained will furnish a basis for modifying some conservation practices to better adapt them to local conditions.

...e a result of recent soil conservation demonstrations.



I. K. Landon leads a group down what was formerly the main street of a farm village in Taiwan.

To train local technicians and to demonstrate soil conservation practices to farmers, field demonstrations were started. Farms in Taiwan average only about 3 acres. Farmers have relatively small financial resources but labor is cheap and most of them have large families. It is remarkable what can be done with a water buffalo and a steel-pointed "V" drag or a locally-made scraper patterned after an American make if you have plenty of man-hours.

Farmers here have the same inherent love of the soil as any true lover of rural life. They also have the normal human desire to better their lot.

Compost houses are an important business on any Taiwan farm. Practically all refuse is returned to the soil. Every corner of land is used for something. Farmers who claim they make no money out of pork keep hogs for the manure. Use of fertilizer has been increasing by leaps and bounds for several years. All of these methods plus improved varieties and insect control resulted in record breaking rice crops in 1954 and 1955.

The land-to-the-tiller program, which gave every farmer the opportunity to become a land-

A cover crop and mulch protects this Taiwan orchard from erosion.

owner, and reorganization of farmers' associations into bona fide farmer operated organizations have given farmers a new outlook and a new lease on life.

What has happened in the Ahkungtien watershed in southwestern Taiwan is an outstanding example of what is happening in soil conservation. We can point to only 3 such cases now but a program is starting in 3 other watersheds and the idea is spreading. Many soil conservation measures have been used for a long time and their use in Taiwan is spreading as the educational program gains headway.

The Ahkungtien reservoir has a capacity of 36,500 acre-feet, and irrigates 5,370 acres of land in Kaohsiung Hsien County. Much of its watershed of 7,025 acres is cultivated land on steep slopes.

Soil conservation trainees building a terrace with locally made fresnoe.

After repossession of Taiwan by the Chinese in 1945, the land, formerly held by two Japanese companies, was given to the Taiwan Forestry Administration of the Provincial Government and to the Kaohsiung County Government.

Farmers have brought more and more of the land under cultivation. The combination of heavy rainfall, steep slopes, and careless cultivation resulted in serious erosion. Three years after the reservoir was completed more than 2½ million cubic yards of silt—in some places 25 feet deep—had been deposited in the reservoir.

Water disposal chute on a Taiwan sugar corporation farm.

A multiple-agency committee was organized to control siltation. The program of this committee was to recall from cultivation and reforest all land with a slope of more than 10 percent. Several difficulties in enforcing this program soon became apparent:

1. The farmers on this public land, though illegal tenants or squatters, were dependent on it for their livelihood and could not be driven off under existing customs.

2. Sugarcane produced in this area made a significant contribution to the foreign exchange earned from the sale of brown sugar.

Runoff plots on the Taiwan Tea Corporation Experimental Farm near Linkou.

3. Old cropland, even after reforestation, would continue to contribute silt to fill the reservoir until an adequate forest cover was established. This would require several years.

As a means of overcoming these difficulties, the committee approved a plan permitting the farmers to construct level bench terraces and continue farming the best of the fields. Although the bench terracing program was started late in the spring of 1956, farmers applied for permission to bench 497 acres. They were not familiar with the specifications set up by the committee, and only a few of the benches were acceptable on the first inspection.

After faults were pointed out, the farmers corrected them so that by the time of the summer's typhoon rains, of the 128 acres that had been benched only 6¼ acres failed to meet the specifications.

These 497 acres are only a small part of the watershed but, to the extent that bench terraces have been constructed, the farmers can continue to earn their living, the sugar mill will have raw materials, and the siltation of the reservoir will be checked. With a better and earlier educational program this year, more farmers can file applications, have their lands inspected, and start construction earlier in the winter.

A program of permitting illegal tillers of public lands to continue cultivation, providing they will protect them from erosion by building benches, may be hard to visualize in the United States. But it is a practical and humane method of protecting the Ahkungtien Reservoir from siltation and demonstrating what can be done with such land. And other farmers in nearby watersheds are starting to build bench terraces or improve the ones they have.

In addition to on-the-job training of Chinese soil conservationists both in provincial and local governments, a special course was held in April and May 1956. It included both classroom sessions and field experience. Fifty field employees of the Provincial Department of Agriculture and Forestry and of county and township government agricultural offices attended. Their effectiveness after returning to their local stations is shown by the rapid increase in requests

(Continued on page 166)

Pastures Need Weed Control

No. 20

This is the twentieth of a series of articles to appear from time to time in explanation of the various phases of research being conducted by the Department of Agriculture on problems of soil and water conservation.

By DAYTON L. KLINGMAN

WEEDS can be controlled in pastures more efficiently today than ever before. The benefits of controlling weeds hardly need to be pointed out because it is common knowledge that these largely useless plants use nutrients, water, and light that would grow plants of higher value.

The losses from weeds in pastures are tremendous and the losses vary greatly from pasture to pasture, making accurate estimates of losses difficult. In one pasture in Nebraska around two-thirds of the total production of plant material consisted of weeds. The 3-year average yield of dry matter, including weeds, in the pasture was 4,214 pounds. Of this, 2,310 pounds were broad-leaved weeds and 701 pounds were weed grasses.

For every pound of weeds grown in pastures the production of more desirable forage plants is usually reduced by an equal amount. This broad generalization varies with moisture conditions and the weed and pasture species involved. If legumes are substituted in the space occupied by weeds the production of desirable forage will be proportionately greater because of their vigorous growth habit and because of the nitrogen fixation that occurs with legumes.

The potentialities of 2,4-D alone, and in combination with cultural practices for controlling weeds in pastures, is clearly indicated in studies that have been conducted at several locations in both the humid and semihumid areas of the United States. One of these studies was started in the Arthur Hornung pasture south of Lincoln, Nebr., in the fall of 1949. The most numerous weeds were ironweed, false boneset, hoary vervain, many-flowered aster, and annual ragweed. It was found that spraying with 2,4-D was more efficient for control of most broad-leaved weeds than mowing, but the greatest weed control and improvement came from plowing and reseeding to adapted grasses and then giving a supplemental spray with 2,4-D.

Three annual treatments of 2,4-D ester at 1 pound per acre reduced the stand of perennial weeds 70 percent; mowing reduced these same weeds 34 percent while plowing and reseeding plus annual 2,4-D treatments controlled more than 90 percent. Similarly, annual weeds also were reduced in the year after treatment. The sprayings with 2,4-D reduced stands of annual broad-leaved weeds by 66 percent, mowing brought a reduction of 22 percent, and plowing and seeding to grass plus spraying with 2,4-D reduced stands 78 percent.

The amount of vegetation eaten by cattle was increased by all weed control treatments. The treated areas were more attractive to the grazing cattle because unpalatable weeds were greatly reduced and the density of desirable grasses was increased. In the untreated pasture areas cattle ate an average of 1,124 pounds of dry matter per acre, in those mowed 1,346 pounds, in the sprayed areas 1,654 pounds, and in the reseeded and sprayed areas 2,770 pounds

Weed test plots: (center) untreated; (left) mowed about July 1 for 4 years; (right) sprayed with 2,4-D in June for 4 years.

Note.—The author is agronomist, field crops research branch, Agricultural Research Service, Beltsville, Md.

of dry matter per acre was consumed. This means that the treated pastures as listed above, produced, respectively, 20, 48, and 146 percent more edible forage than the untreated pasture.

The above example showed that the greatest and most rapid improvement resulted from plowing and seeding to adapted grasses supplemented by 2,4-D treatment. On tillable pasture this method should be given first consideration. Plowing alone will control many of the perennial pasture species such as ironweed, vervain, goldenrod, asters, yarrow, tall dog fennel, and many others. It is not effective against persistent weeds such as wild garlic, Canada thistle or against brush such as persimmon. However, plowing is limited to land of gentler slopes, and soils relatively free of rocks and other obstructions; thus it cannot be used on a high percentage of the pastureland. In addition, there is a high cost for tillage, seed, and fertilizer usually required for success; also there are frequent failures in obtaining stands, often because of weeds. Incidentally, there are now some new herbicides that show great promise for weed control in establishing forage crops, but space is too limited for discussion of them here.

The use of 2,4-D has several economic advantages over mowing for weed control in areas where a full program for improving pastures is not feasible. In addition to being more effective on many species, control does not usually depend upon as critical timing as is needed with mowing. Thus, more kinds of weeds may be controlled with a single spraying than with one mowing. In addition, ground that has rocks, stumps, and other obstructions can be more easily sprayed than mowed. Also, certain weeds with a low-growing habit cannot be controlled at all by mowing but may be controlled effectively by herbicides.

Legume species vary in their reaction to herbicides. Ladino clover and whiteclover tolerate 2,4-D after they are established, although their growth rate is temporarily reduced. Annual lespedeza may be sprayed with a half pound of 2,4-D amine, if applied after the 6-leaf stage, with only 10 to 15 percent reduction in yield when compared to weed free, untreated lespedeza. This rate of treatment controls many of the weeds that are a problem. When 2,4,5-T

The stand of perennial weeds was reduced 65 percent in 3 years by spraying with 2,4-D once each year.

is applied, lespedeza is eliminated. It is not safe to spray established alfalfa, sweetclover, or red clover with either 2,4-D or 2,4,5-T.

Combinations of spraying and mowing have not been explored sufficiently in pasture weed control. In some areas mowing is desirable for reasons other than weed control. For example, it may help encourage more uniform grazing and favor development of the associated legumes. Where such practices are useful the potential for herbicides has not been fully determined.

If any method of weed control is to be successful it is essential that at least the minimum fertility needs for growing forage plants are met. The objective must be to encourage vigorous growth of forage crops and to fill the space formerly occupied by weeds with plants of higher value.

CONSERVATION COURSES IN SCHOOLS.—"Since today's school children are the public of tomorrow, as part of their education they should become properly informed in the use and development of our natural resources," says Stanley G. Fontanna, dean of the University of Michigan School of Natural Resources.

"How our natural resources are managed depends in great measure upon the decisions of our legislatures —National and State— and the decisions of our governmental administrative bodies," Dean Fontanna declares. "These decisions, in turn, are influenced greatly by public opinion. The better informed the public is, the better will be the results obtained from legislative and administrative bodies."

DISTRICT PROFILE

LONNIE ETHRIDGE of ARKANSAS

WHEN Lonnie Ethridge got a bad knee injury while playing for the Memphis Chicks in 1934, professional baseball lost a promising young rookie. But soil conservation districts, and a lot of other organizations, too, gained a tireless worker.

An all-State college player in baseball, football, and basketball at Arkansas State College, Ethridge left college after his junior year and played baseball and taught school for 3 years. After his knee injury he returned to college to finsh his senior year in 1936 and took up a teaching career.

Ethridge was school superintendent at Swifton, Ark., when his wife, also a teacher, inherited a 367-acre farm. He had grown up on a farm in Conway County, so he and his wife decided to give up teaching and take up farming.

A leader in the organization of the Jackson County Soil Conservation District 6 years ago, Ethridge has served as a district supervisor from the beginning. He has been a member of the board of directors of the Jackson County Farm Bureau for 10 years and served 2 years as its president. He has also served as a member of the county Agricultural Stabilization and Conservation Committee.

Lonnie Ethridge.

Better land use in the district program has meant more pastures and more livestock. Ethridge is secretary of the livestock association at Weldon.

On his own farm, Ethridge has a herd of 72 Angus cattle. His 130 acres of permanent pasture is in ladino clover, lespedeza, fescue, and common bermudagrass. He uses oats for supplemental grazing in the late fall, winter, and early spring. Last year he used only 350 bales of hay, 8,000 pounds of cottonseed hulls, and a ton of cottonseed meal for his 72 head of cattle and some calves.

Farm crops include corn for hogs, milo for hogs and cattle, soybeans, and cotton. Ethridge follows all this cotton with vetch or oats and vetch. On a 12½-acre field in 1956, he harvested 10,000 pounds of vetch seed and 500 bushels of oats, and followed with a summer crop of milo. He pastured the oats for 2 months in the fall and 1 month in late winter. Oats and vetch were reseeded in the milo about September 1.

Ethridge has found that the best insurance against drought is irrigation. He has used furrow irrigation on cotton and soybeans for several years. Although his land is not level, he has recently developed a satisfactory system of flood irrigation. He plans to do some land leveling as rapidly as he can afford it.

In his present system of flood irrigation, worked out with the help of Lyle Bobeck, Soil Conservation Service work unit conservationist, he runs a dike on the contour at 0.3 foot vertical interval. Using a dike disk behind a farm tractor, he builds the dikes 6 feet wide and 1 foot high. He tries to keep the area between the dikes down to 2 or 3 acres. Last year he put three 4-inch applications of water on his cotton and soybeans.

Along with his farming operations and other agricultural activities, Ethridge has continued his interest in education. He is a member of the Governor's Advisory Committee on Education, president of the Arkansas State School Board Association, and president of the Newport school board. For the past 14 years he has taught a Bible class at Weldon.

"People ask me why I do all this free stuff," he says. "'Well,' I tell them, 'if somebody doesn't do it, it just won't get done.' I have an 11-year old son and if there is one thing we can do for the kids, it's give them a good education. I want to do my part to see that they get it."

—BARRINGTON KING

STUBBLE-MULCH FALLOW ON SANDY SOIL

A versatile Nebraska farmer increases crop yields and protects his soil through stubble-mulch fallow with partially homemade machines.

By BILL STUART

BY hard work, imagination in building his own machinery, and a curiosity that leads him to look for a better way to do things Dick Walker, who farms in Nebraska's Panhandle near Gordon, has changed a low-yielding farm to one of the most productive in the area. He has done this in 6 years, with limited capital, on sandy cropland that is extremely susceptible to wind erosion.

Walker says his system of stubble-mulch fallow is mainly responsible for his increased yields and improved soil productivity. His home improved implements enable him to farm more efficiently.

If any machine that Walker uses does not suit him he brings it into his shop, tears it down, and rebuilds it until he has a machine that fits his particular use.

The machine that Walker uses, most of the time, for working his fallow ground has a tool bar frame on which the width can be changed to fit various operations. This machine is equipped with 18-inch sweeps and rolling colters. He also uses a one-way plow and a power-driven, center drive rod weeder. He drills his wheat with a chisel drill equipped with rolling colters.

Wide-row corn on the Dick Walker farm with summer fallowed land between corn rows.

One of the fields that was observed, on which there was a heavy mulch, was being worked for the last time before being seeded to wheat. Walker explained the operations that he had carried out on this field. The first operation in the spring was to go over the field with the sweeps, and the second operation was with the one-way plow, just deep enough to kill the weeds. The third operation was with the sweep, and the last one or two operations with the rod weeder.

Ordinarily no work is done in the fall to winter wheat stubble because in this area the average snow pack in the winter months is 53 inches. If all of this snow, which usually comes with a heavy wind, is deposited on the fields it means about 5 inches more moisture in the ground than on those bare fields where the snow blows off. Walker says he is going to try working some of his stubble fields in the fall with a 30-inch sweep machine to kill weeds and

Dick Walker examines winter wheat planted between wide rows of corn.

Note.—The author is work unit conservationist, Soil Conservation Service, Rushville, Nebr.

Stubble-mulch fallow a month before wheat planting time on the Walker farm.

volunteer wheat. This should leave stubble standing to catch the winter snow.

Walker's main problem when he first started fallowing several years ago was that he did not have any stubble to work with so he had to do something else until he got a crop or two of stubble to work as a stubble-mulch fallow. In order to do this he planted wide rows of corn, 13 feet apart. He summer fallowed between the rows.

The wide-row corn was listed, and cultivated with a tender until the rows filled in and then the sweep machine was used to cultivate between the corn rows. In September, winter wheat was drilled between the corn rows with a 12-foot drill. Walker found that the wheat planted between the wide corn rows yielded about 25 bushels per acre while his stubble-mulch fallowed wheat was averaging 30 bushels to the acre. The corn in the 13-foot rows yielded 10 bushels to the acre.

A cooperator with the Sheridan County Soil Conservation District, Walker has done an outstanding job of protecting his sandy cropland from wind erosion. Besides his wheat farming operations, he raised this year 80 acres of rye and 40 acres of winter barley. He has a herd of 25 range cows and 25 steers that run on 400 acres of native grass.

PRACTICAL TRAINING

By BURTON W. DeVEAU

THE training of university students in specific, practical aspects of farming is a difficult task. Some of the training may be provided on the university farm: Conditions on the university farm and facilities, however, are not average situations. Even if they may be average the conditions soon become well-known among students and this adds to the difficulty of providing practical training situations. This is particularly true in training students in farm planning.

The agriculture department of Ohio University at Athens, has attempted to solve this problem by providing practical experiences for its students with the cooperation of the Athens Soil Conservation District. All students in the general agriculture and soil conservation curricula are required to take a course in farm management in their senior year. In this course they are required to plan a 5-year farming program for a specific farm in the Athens area.

This class is divided into committees composed of 3 or 4 students. Each committee is assigned a separate farm. The farms are

Note.—The author is chairman, department of agriculture, college of commerce, Ohio University, Athens, Ohio.

Left to right: Professor DeVeau, students James Olinger and Arthur Jones, and farmer Max Crabtree discuss Crabtree's conservation plan.

selected according to the following criteria: (1) The farmer must be a cooperator with the Athens Soil Conservation District; (2) the farmer is willing to cooperate and assist the committee assigned to his farm by providing necessary information, such as: past practices, future plans, and available financial resources; (3) the farmer has not had a complete farm plan formulated, or he wants to change his present plan.

This method of instruction has been in operation 4 years. Different farms have been selected each year. There has been no difficulty in securing the cooperation of farmers.

The Soil Conservation Service cooperates by assisting in the selection of farms and providing access to soil and field layout maps of the selected farms. Technical advice is also provided at times.

Students take soil samples for testing.

The students are given careful instructions concerning their activities at the farms. The instructor accompanies the committees during their first few visits to the assigned farms. Then, the committees work with the farmers in developing a 5-year farming program. At the end of the semester each committee is expected to submit a written plan to the instructor and to the cooperating farmer. Members of each committee describe their plan to the rest of the class at the assigned farm in the presence of the farmer.

The 5-year plan is expected to include: (1) A general description of the farm including location, topography, farmstead, etc.; (2) a general description of the proposed 5-year plan; (3) a soil map; (4) soil test results for each field; (5) present and proposed field layout maps; (6) present inventory; (7) proposed inventory at the end of 5 years; (8) a cropping and reforestation plan for each field for every year in the plan; (9) expected crop yields each year; (10) amount of livestock and poultry that should be raised each year; (11) breeding practices; (12) total feed requirements for livestock and poultry each year; (13) total amount of crops that should be sold; (14) total amount of feed fed to livestock and feed purchased each year; (15) seeding mixtures and rates; (16) conservation practices to be adopted on the farm each year; (17) fertilization practices to be followed on each field every year; (18) building and fencing plans for each year; (19) expected machinery and equipment purchases; (20) use of labor; (21) marketing procedures; (22) expected income and expenses; (23) expected credit transactions; and (24) all other information pertinent to the successful operation of the farm.

Students measure the slope of a field.

This method of instruction accomplishes several objectives. It serves students by providing a practical farm situation to gain supervised farm planning experiences, giving an opportunity to work with others—students, tech-

nicians, and farmers, providing an opportunity for oral and written expression, and allowing him to compare theoretical knowledge, ideas, and experiences with others. It serves the cooperating farmer by providing him with a well balanced 5-year farm work plan utilizing his ideas and giving him experience in sharing ideas and knowledge with others. It helps the university by promoting better public relations. It helps the instructor by keeping him informed of the present practices in the area and enabling him to have experiences in working at the grass roots level. In other words, this cooperative venture in education not only serves students but serves the Athens Soil Conservation District, the university, and the entire community.

ARE BLACK DAYS AHEAD?

(Continued from page 149)

The poorer lands produce good yields only in years when we do not need the production. On such lands, we should make sure that agricultural programs work together and not at cross purposes.

Finally, one of our really big advanages over the situation of the thirties is the help and backing of our soil conservation districts. Their work is a tremendous factor in the success of our present conservation program. With their guidance and influence, plus the actual help they are giving to the many thousands of cooperators in Kansas, we can count on rapid progress in solving this problem.

CONSERVATION ON TAIWAN

(Continued from page 159)

from farmers and Government-owned agricultural corporations for information and help in establishing soil conservation measures.

For example, both financial and technical help has been given to the Taiwan Power Company in establishing better conservation measures in the watershed of its Wusheh Reservoir. Taiwan Sugar Corporation asked and received technical help in solving erosion problems on several of its plantations. Technical advice was given to the Tachiachi Watershed Development Commission, which is planning the multiple-purpose development of one of Taiwan's largest valleys, and to the watershed construction committee for Shihmen Dam, just being started with ICA aid, and already being labeled the TVA of the Far East.

DISTRICT PROFILE — FRANK KNOBLOCK of NEW MEXICO

FRANK KNOBLOCK has been the driving force behind the Socorro Soil Conservation District board of supervisors since 1947. That was the year he became a member of the board. He has been chairman of the board since 1948. His leadership and cooperation with the First State Bank resulted in three annual Banker's Award Programs.

The Socorro Soil Conservation District was host to the annual meeting of the State Association of Soil Conservation Districts in 1954. In 1955, Frank was selected the best supervisor in the State, and was presented a bronze plaque.

In the past 4½ years, Frank has missed only 2 supervisor meetings. He was largely responsible for the purchase of district cooperation signs by individual cooperators. The board also purchased and put up 4 district boundary signs.

Frank Knoblock.

Frank put up 3 of these with the help of his hired man. The Socorro District placed second in the State in the 1954-55 Goodyear Contest.

Knoblock's leadership in the Lion's Club, Game Protective Association, County Fair Board, Middle Rio Grande Conservancy Board, and the Farmers Home Administration county board has been outstanding. He is a member of the Farm Bureau and the New Mexico Cattle Growers' Association.

He was born and reared in Socorro County, and served as sheriff for 6 years. His wife is a teacher in the Luis Lopez Grade School. He has completed more than 90 percent of the planned conservation work on his ranch and farm. His program involves proper grass management and deferred grazing on his 12,371-acre ranch. He farms 37 acres under irrigation, on which he practices crop rotation and improved irrigation. This acreage has been leveled, and 53 irrigation structures have been installed on it.

—E. O. HILL

WATER FOR AMERICA. By Edward H. Graham and William R. Van Dersal. 112 pp. Illustrated. 1956. New York: Oxford University Press. $3.50.

THIS book is a fit companion for two previous books of the same type and by the same authors, "The Land Renewed" and "Wildlife for America." It is written in a style that makes it readable and interesting for children from the fifth grade up, and also interesting and informative for adults of all classes. The 55 full page photographs are outstanding and dramatize and enhance the factual material.

The subtitle, "The Story of Water Conservation," accurately expresses the aim of the book, but hardly gives a complete picture of the contents. In a topical presentation the authors discuss the importance of water, where it comes from, how it is used, how it might be used, water rights, water damage, and water power, as well as how water may best be conserved.

The first half of the story deals mainly with the importance of water and how it affects our lives. The last half tells, in simple but effective terms, what we should do to assure a permanent supply of good water for the United States. Drainage, irrigation, flood control, farm ponds, farm water-disposal systems, and water for wildlife are just a few of the topics discussed.

This is a book that should be in all school libraries and in all other libraries where readers may have a need for concise and accurate information about 20th century water problems of the United States.

—TOM DALE

GRASSES AND DRY FARMING.—Luther Shields, a dryland farmer and a member of the board of supervisors of the Dolores (Colo.) Soil Conservation District, told me the other day, "I have made more money from acreage planted to grass than from a like number of acres planted to either beans or wheat."

Shields owns and operates a 160-acre farm where the annual rainfall is 17 to 19 inches. Using the generally employed farming practices, he saw his topsoil being eroded away from the sloping fields and gullies in his drainageways getting larger. He realized that if he was going to stay in business he was going to have to change his farming practices. He knew that to successfully dry farm his land, he would have to hold and store in the subsoil the maximum amount of winter moisture that fell on the land.

In 1950, Shields discussed his problems with Soil Conservation Service technicians working in his district, and together they developed a conservation plan of operations. He knew that farming on the contour would involve more work, but he was confident that by so doing, he could stop the loss of his topsoil and store more moisture in the subsoil.

The first operations were to make a soil survey and a design of the farm for contour farming. When the survey was completed and the contour design decided upon, guidelines were staked out and marked. The terrain on the farm is variable and several areas would not fit into the contour pattern. These areas were planted to intermediate wheatgrass.

The gully in the main drainageway was filled in and shaped so it could be crossed with farm implements. The entire waterway was then seeded to grass to tie the soil down and help catch soil washed down from farms higher on the drainage.

A pond was constructed to provide stock water at the lower end of the grassed waterway. Since the construction of the pond, Luther has been able to keep a few head of livestock which has made it possible for him to provide milk and beef for the family.

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Typical of all dryland farms in Montezuma County, the crop rotation is pinto beans, wheat, and summer fallow; but Shields also fits grass into this rotation for 3- or 4-year periods. With the past and present prices of beans and wheat, Luther says that he has made more money from the grass acreage than from beans or wheat.

With contour farming, grassed waterways, livestock water development, and grass in his rotation, Luther feels that he is keeping his farm productive and saving it for the next generation. Luther has often said, "There is more to this dryland farming than just planting and harvesting."

—CHARLES E. REAGAN

EVERYBODY'S BUSINESS.—The Greene County Soil Conservation District in southwest Ohio has a very active board of supervisors. But a great part of the success of the board's cooperative work can be traced to its program committee. This committee is composed of leading farmers, bankers, contractors, implement dealers, grain dealers, and businessmen. It holds an annual planning meeting each December to which a representative from all farm agencies and organizations are invited. These include the Soil Conservation Service, Vocational Agriculture, Extension Service, Agricultural Stabilization and Conservation Committee, Production Credit Association, Farmers Home Administration, Grange, Farm Bureau, Rotary, Kiwanis, Sertoma, Garden Clubs, and the Xenia Chamber of Commerce. School officials and county commissioners also participate.

The annual meeting provides an opportunity for all these organizations to get together and plan activities for the following year. The group elects its own chairman who leads the discussion in analyzing the last year's program. This helps in planning activities for the new year. At this meeting the committee selects the leader for each activity. The organizations like this method because it shows them what activities are needed in the district and how they can best help. They then can prepare in advance for the events. Even though a representative does not participate, he learns the needs and activities of his county. Thus, the farmer-elected board of supervisors of the Greene County Soil Conservation District, giving its time and effort without pay, makes an ideal group around which all agencies can unite.

Under this program, the personnel of the SCS, assigned to the Greene County District, spend more of their time in applying soil and water conservation practices on the land. The well planned program of sharing the educational work assures the district of an informed public and also allows SCS technicians more time for direct assistance to farmers.

In the Greene County District there is at least one major conservation activity each month. During April, which is designated Conservation Month, however, an extensive educational program is conducted.

The first activity in April 1956 was the FFA land judging contest. Every FFA member in the county, about 180, took the "two-hole" competitive course in land judging. The district provided standard medals for the 3 high winners from each chapter; it also gave a large trophy to the chapter with the 3 highest scores.

The supervisors were very pleased when 320 school teachers dismissed school to go on a conservation tour. The teachers traveled from one farm to another where technicians explained the value of different conservation practices. The county and city superintendent of schools cooperated in arranging for this rewarding day. The Borden Company provided free milk. The Xenia Gazette sent one of its feature writers to get a story and pictures. To give each teacher some homework, the Soil Conservation Service and Extension Service provided packets of booklets and pamphlets.

When the poster contest was announced, the county garden clubs initiated the contest in the fifth and sixth grades of each school. George Barton, secretary of the Chamber of Commerce, asked all merchants to let the children display the posters in store windows. The Sertoma, Kiwanis, and Rotary Clubs provided trophies for the first, second, and third prize winners, and the Greene County Soil Conservation District gave an attractive certificate to each student who participated. The Citizens First National Bank and the Dayton Power and Light Company were active supporters. Each displayed large conservation exhibits in its lobby.

Conservation Month is only a small part of the many educational activities in the Greene County District. Walk into any prominent business place in the county and you will find that the proprietor is familiar with the district conservation program. As one merchant put it, "We realize that if the time ever comes when our soil will not provide enough food for all, the farmer will eat at the first table and we will eat what is left."